Description of Additional Supplementary Files

File Name: Supplementary Data 1
Description: Selective homonuclear decoupling pulse to distinguish leucine from valine.

File Name: Supplementary Data 2
Description: HMQC pulse scheme for real time ^{13}C chemical shift evolution along with the selective homonuclear decoupling pulse.

File Name: Supplementary Data 3
Description: SOFAST HMQC pulse scheme for constant time ^{13}C chemical shift evolution along with the selective homonuclear decoupling pulse.